

National Blood Reserve

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AABB Interorganizational Task Force
on
Domestic Disasters and Acts of Terrorism**

January 2004

Task Force Mission

- **During times of disaster:**
 - **Coordinate blood inventory management in U.S.**
 - **Manage donor response and collections in excess of actual need**

Requested by Blood Safety and Availability Committee to:

- **Develop a plan for establishing a National Blood Reserve for disaster response**

Task Force Participants

- **Level 1**
 - AABB, ABC, ARC, BCA, ASBPO, FDA, CDC, HHS
- **Level 2**
 - AATB, AHA, PPTA, AdvaMed, FDA-Communications, CAP
- **Blood Reserve Work Group**
 - AABB, ABC, ARC, BCA, DoD

National Blood Reserve Purpose

- **Respond to Civilian Need: Health Emergency, Disaster or Act of Terrorism**
 - Supply Disruption related to Donor Ineligibility and/or Product Quarantine
 - Increased Demand relating to Casualty Treatment
- **Respond to Military Need:**
 - Initial Shipments for No or Short-Notice Conflicts
 - Reduce Reliance on Frozen Reserve

Task Force Considerations

Incorporated Lessons Learned from Real Disasters and National Exercises

- **Embassy Bombings in Africa, Oklahoma, 9/11**
- **Local Disasters – Floods, Hurricanes, Tornadoes**
- **TOPOFF 2 Exercise**
- **Military Operations**

Task Force Considerations

Examined Existing Models for Comparable National Reserve Operations

- **The Strategic National Stockpile (Pharmaceuticals)**
- **DoD War Reserve Materiels**
- **Vendor Managed Inventory**
- **Corporate Exigency Contracts**
- **Civil Reserve Air Fleet (CRAF)**
- **National Disaster Medical System (NDMS)**
- **The Strategic Oil Reserves**
- **Other DoD Systems – Readiness Mgt. Application(RMA); Industrial Preparedness Planning (IPP)**
- **Industrial Base Capacity**

Task Force Recommended Reserve Characteristics

- **Liquid RBCs - As, Bs, and Os**
- **Approximately 10,000 units**
- **Designated Storage Sites**
- **Available for Shipment in 4-6 Hours**
- **Rotation of Reserve Every 2 Weeks**
- **Combination of Government & Private Sector Control over 10,000 units**

Why Liquid not Frozen?

- **Burden of maintaining/updating the frozen units to meet current FDA/AABB testing and donor screening requirements**
- **Logistical drawbacks**
 - Slow process (1 unit/machine/hour)
 - 14 days post-thaw shelf-life
 - Ultra low storage temperature requirements

Why Liquid not Frozen?

- **Stock Rotations**

- **Costs (\$28.7 M)**

- \$5 M investment + rotation (\$500 per unit)
- \$23.7 M equipment (500 machines + 20 freezers)

Why Just Liquid RBCs ?

- **Platelets**
 - 5 day shelf-life – not practical
- **Plasma and other components could be added**

10,000 Units

- **Based on:**

- **Blood Product Loss in TOPOFF 2 Exercise**
- **Loss of Total Blood Supply in 2 Major Metropolitan Areas**
- **Need to Immediately Provide a 3 Day Replacement Supply**

Designated Storage Sites/Shipment in 4-6 Hours

- **Designated Storage Sites Provide**
 - **Nationwide Coverage within 4 to 6 hours**
- **Not Virtual or Frozen**
 - **Available immediately when needed**
- **Satisfies Military Need for No or Short-Notice Shipments**

Rotation of Reserve Every 2 Weeks

- **Shelf Life of 42 days**
- **3 Days Required for Processing**
- **Hold for 2 weeks prior to distribution**
- **Reserve units will be 2.5-3 weeks old when distributed**

Combination of Government/Private Sector Control

- **2000 units controlled by government, held by government through DoD**
- **8000 units controlled by government, coordinated by the Interorganizational Task Force, held in Regional Blood Centers**

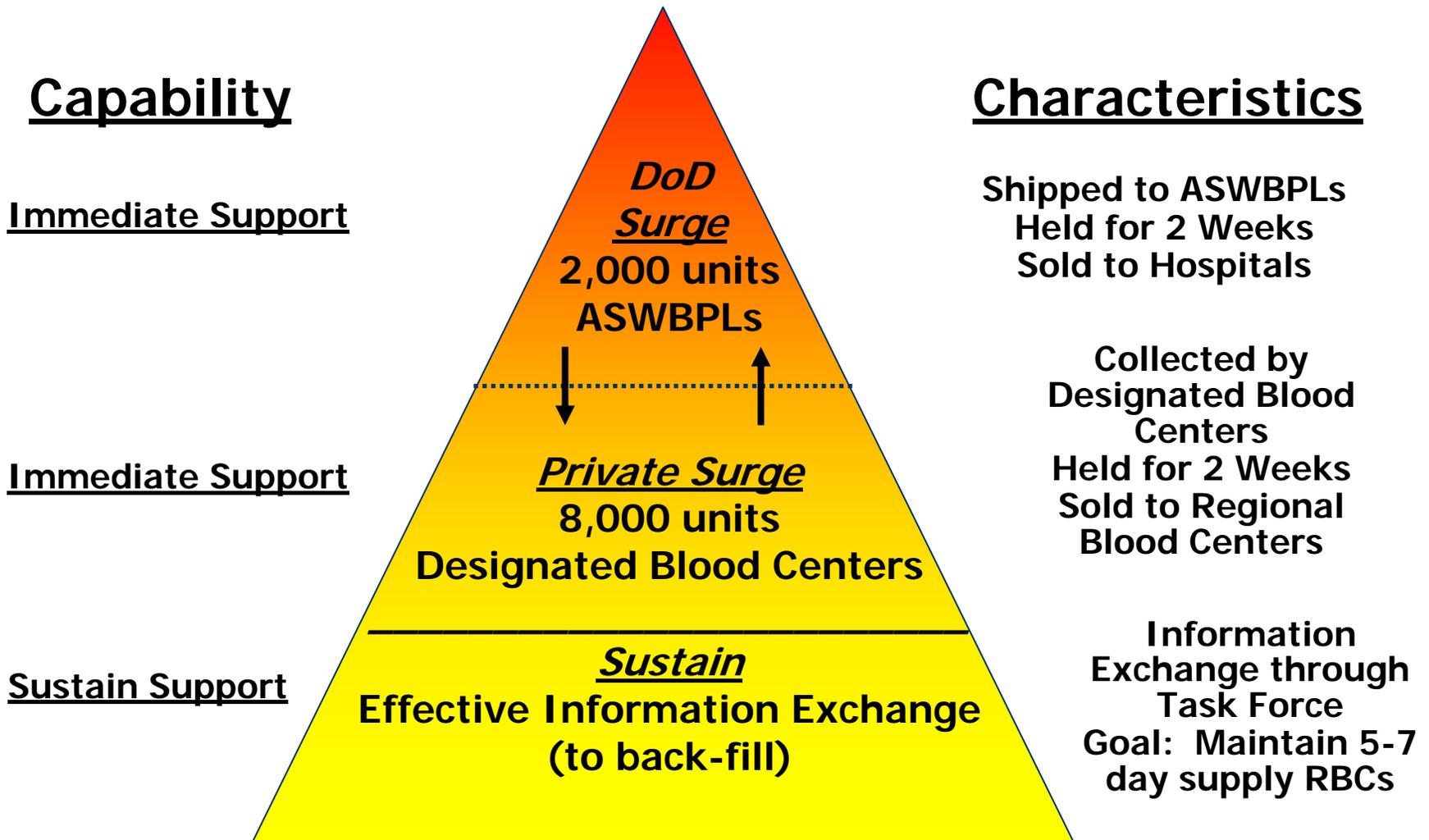
Why Government/Private Sector Control?

- **Need is public: Federal, state, or local emergency plan and response**
- **Source is private: The individual donor, supplied through regional blood centers**
- **Government investment is required: Federal funding through contracts or grants to DoD and Regional Blood Centers is necessary to establish and maintain a National Blood Reserve**

Existing Examples for Reserve Management Options

	Option 1	Option 2	Option 3
OWNERSHIP	FEDERAL	FEDERAL (by contract)	PRIVATE
CONTROL	FEDERAL	FEDERAL	PRIVATE
STORAGE	FEDERAL	PRIVATE	PRIVATE
VISIBILITY/ INFORMATION	FEDERAL	PRIVATE (report to Federal)	PRIVATE
EXAMPLES	HHS/SNS (Pharma Push Packages)	HHS/SNS (VMI)	Industry Coordination (Interorgani- zational Task Force)

National Blood Reserve: A Single Program With Levels of Response



NBR Recommendation

Characteristics

- Federal/Private Partnership
- Real Units on the Shelves
- Secure
- Access to Distribution

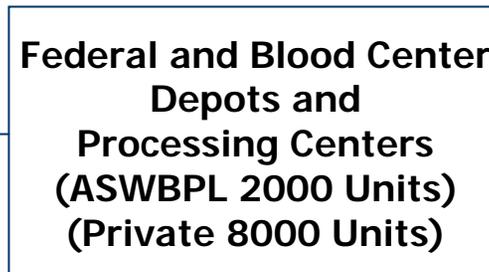
Operations

- Federal Depots and Designated Regional Blood Centers under contract with Government
- Blood rotates through Depots/Centers to be available as a reserve
- After 2 weeks, distributed through contracts with healthcare facilities and Regional Blood Centers

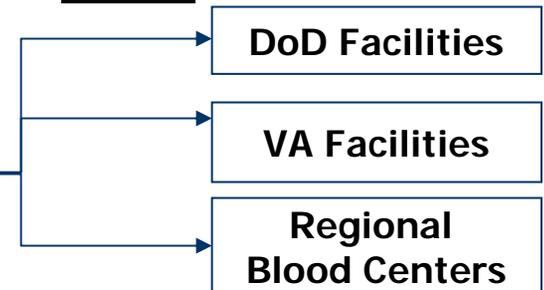
Source of Supply



NBR Storage



Users



Transportation and Distribution through Use of Existing Contracts
Such as Those Used to Move the SNS

National Blood Reserve What Is It?

- **Capability to Ship Blood within 4-6 Hours**
- **Program, Structure, Management, Coordination**
- **Contingency Planning / Crisis Response**
- **Information**
- **Supporting Capabilities (e.g. supplies)**
- **Transportation and Distribution**
- **Public/Private Control**
- **What is it Missing? \$\$\$\$\$**

Cost Considerations

2,000 Units @ ASWBPL	Start Up Costs	Annual Cost
Initial purchase @ \$225/unit - establish reserve	\$450,000	
Capital investment for refrigeration and facility space to store reserve		\$0.00
Operational costs to rotate reserve (shipment)		\$ 520,000
Reimbursement for discounted value to rotate units (10% value per unit lost due to shorter shelf life after processed through reserve)		\$1,040,000
Total Costs	\$450,000	\$1,560,000

Cost Considerations

8,000 Units @ REGIONAL BLOOD CENTERS	Start Up Costs	Annual Cost
Initial purchase @ \$225/unit - establish reserve	\$1,800,000	
Capital investment for refrigeration and facility space to store reserve	\$340,000	
Operational costs		\$1,040,000
Reimbursement for discounted value to rotate units (10% value per unit lost due to shorter shelf life after processed through reserve)		\$4,160,000
Total Costs	\$2,140,000	\$5,200,000

More Cost Considerations

- **Additional costs:**
 - Increased cost of blood due to inflation and new safety measures
- **Discounted value must be tested in market conditions**
- **Implementation strategy: A phased-in approach lessens full investment requirement in early stages**

Total Anticipated Costs

Start Up Costs **\$ 2,590,000**

Annual Costs **\$ 6,760,000**

Critical Success Factors

- **Key to Success of any Blood Reserve is a Stable and Adequate Blood Supply**
 - **Requires Federal Support of National Awareness Campaigns**
 - **At levels Comparable to HHS Organ and Tissue Donation Campaigns**

Implementation

- **Government Approves Concept and Funds Program**
- **Use Existing Resources to fill 2,000 Unit Reserve**
- **National Awareness Campaign Developed**
- **Government and Private Sector Develop Contracts to fill 8,000 unit reserve**
- **Task Force and Government Develop Policies for Authorizing Use of the NBR**
- **Information Processes and Tools Established to Manage NBR**

Benefits of National Blood Reserve

- **Draws on Existing Public and Private Infrastructures and Systems**
- **Forces Commitment to Public Campaign to Increase Donors**
- **Modest Cost**
- **Supports Critical Infrastructure Imperatives of Homeland Security**

Recommendation

That the Advisory Committee on Blood Safety and Availability:

- 1. endorse the concept of a National Blood Reserve Program with the characteristics recommended by the AABB Interorganizational Task Force on Domestic Disasters and Acts of Terrorism; and**
- 2. recommend that the Assistant Secretary for Health further develop, in cooperation with the private sector, details of such a plan, and secure federal funding for this program.**

Management Structure

